# Barriers to and opportunities for improved MASLD/MASH education: a qualitative discussion with medical training program leaders

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## Background and Aim

- Metabolic dysfunction-associated steatotic liver disease (MASLD, formerly NAFLD) and metabolic dysfunction-associated steatohepatitis (MASH, formerly NASH) are increasingly prevalent in the United States.
- However, MASLD and MASH remain substantially underdiagnosed, and many patients with MASH are not receiving care in accordance with the latest guidelines.
- We aimed to understand how MASLD/MASH-specific training is currently offered in medical training programs and to identify barriers to and opportunities for the improvement of MASLD/MASH education.

## Methods

- We conducted two qualitative 90-minute virtual focus groups with leaders of medical training programs on August 24 and 28, 2023.
- One group included leaders of primary care (nurse practitioner/physician assistant, internal medicine, family medicine) programs (PCP, n = 5).
- The second group included leaders of specialist (endocrinology, gastroenterology, hepatology) programs (n = 6).
- PCP program leaders reported 4 to 23 years in their current roles; specialist program leaders reported 3 to 16 years.
- Participants were recruited by email from a pool of participants who participated previously in a larger quantitative survey on MASH curricula.
- They were knowledgeable about their curricula (self-reported) and only one participant per institution was allowed.
- An institutional review board (IRB) exemption was issued.

## Results

### TRAINING

Both PCP and specialist program leaders agreed that little time (1-3 hours) is devoted specifically to MASLD/MASH education, though trainees gain practical experience due to the high prevalence of MASH among their patients.

*"There are a lot of competing topics for our curriculum. I think NASH is one important topic. I'm not sure it's more important than lung disease, kidney disease, or infectious disease. I don't know how to judge all these things. I think they're all equally important. NASH is certainly life-threatening. It's all relative."* – **PCP**

*"Although you might have particular lectures associated with NASH, in conjunction with obesity, dyslipidemia, and bariatrics, you would be talking about NASH as well."* – **PCP**

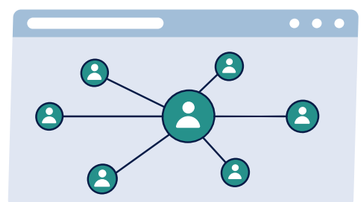
### AWARENESS

Virtually all participants agreed that MASH is substantially underdiagnosed and there is a need for greater awareness among healthcare professionals and the public.

*"Among competing responsibilities on any given day, this would not be on top of the priorities, unfortunately. Our residents or even ourselves, you get a blood pressure of 170, you can pay attention to it. You have triglycerides over 1,000, you can pay attention to it. You're not going to go back and do this screen for NASH or NAFLD and say, 'Yes, that's what they have.'"*– **PCP**

*"It flies under the radar until people develop cirrhosis and then their index diagnostic event is a decompensation event…It needs earlier identification so it can be treated before it develops to where it's decompensated liver disease."* – **Specialist**

*"In a disease state where there's no FDA-approved intervention yet, and we're talking about risk factor control, it becomes a little bit of a bandwidth thing. I'll recommend to the primary care doctor that we need to work on lipid control and that statins are safe in liver disease, but my ability to implement statin dosing and diabetes management and A1c following is somewhat limited, so I'll give advice and send that back to the primary care doctor."* – **Specialist**



*"When you say NASH, that implies that there's liver damage. This should be a team sport here that involves primary care, but also the hepatologist, maybe even the endocrinologist, and there'll be a dietician. It'll be an interdisciplinary approach."* – **PCP**

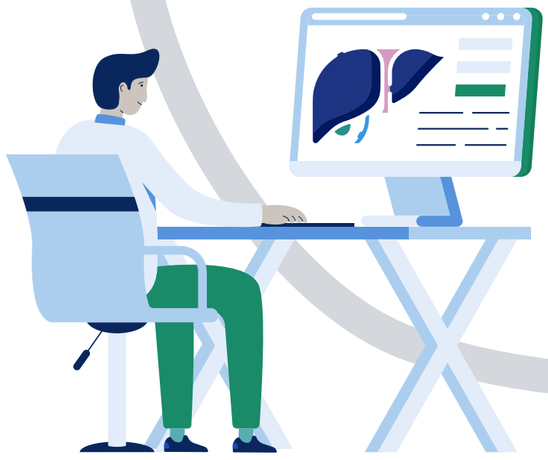
### CARE COORDINATION

Leaders of PCP and specialist programs agreed that MASH management requires both primary and specialist care, though consensus regarding specific responsibilities is lacking and not outlined in curricula.

There are multiple factors which may impact how well collaboration will work:

- Severity of NASH
- Patient preference/ comfort
- Access to testing and specialty care
- Availability of specialty care
- Health facility designations and insurance

### THE FUTURE



MASLD/MASH nomenclature updates evoked mixed feelings from program leaders; while understanding the rationale, they foresee challenges implementing the new nomenclature.

Almost all believed the introduction of MASH-specific pharmacotherapies would encourage institutions to expand MASLD/MASH education in their curricula.

*"I think this was a change that was done for the right reasons. Broadly speaking, there's too much stigma about liver disease and some of our nomenclature perpetuates that, so I think this is a more accurate term that lets us get into the nuances of what is a very heterogeneous disease. Like any change, there's going to be resistance to it, but we'll come around."* – **Specialist**

*"We, as the transplant hepatologists, have the knowledge base and the comfort level to talk about disease progression, so while the endocrinologist and the primary care can talk about risk factor management and control, we also can talk about the whole umbrella of the natural history of disease from simple steatosis to NASH to cirrhosis to decompensation events, et cetera. That's where we can provide more education beyond treatment of associated metabolic comorbidities."* – **Specialist**

*"If there was a medication that was proven in a clinical trial to reverse fatty liver disease and was shown to improve mortality due to fatty liver disease, a lot of flags would be run up the flagpole. It would be fun summer in our didactic conferences, it'd be grand rounds, and it would be shouted to the hinterlands."* – **PCP**

## Summary and Conclusions

- Leaders of medical education programs believe MASLD/MASH education is important, but minimal time within curricula is dedicated to it.
- Novel pharmacotherapies and changes in nomenclature may offer opportunities to expand or improve MASLD/MASH education.
- These findings suggest that, absent a broad change in medical training, knowledge of MASLD and MASH evaluation and management is unlikely to improve.

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AMA serves on the advisory board for and receives speaking/teaching fees from Novo Nordisk. She receives research grants from Target Pharma and Pfizer.

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DD has consulted for Novo Nordisk and been a speaker for Intercept.

MN serves on the advisory board for Altimmune, BI, Cytodyn, 89BIO, GSK, Madrigal, Merck, Novo Nordisk, Perspectum, Siemens, Terns and Takeda. He is a principal investigator for a drug study with Allergan, Akero, BMS, Gilead, Galectin, Genfit, GSK, Conatus, Corcept, Enanta, Madrigal, Novartis, Novo Nordisk, Shire, Takeda, Terns, Viking and Zydus. He is a stockholder with Rivus Pharma, CIMA, Cytodyn, and ChronWell.